

REMARKS

Claims 1-11 are pending in the application. Claims 1-4 and 6 have been examined and stand rejected. Claims 1-5 and 7-23 have been canceled without prejudice or disclaimer of applicant's right to pursue the claimed subject matter in one or more divisional applications. Claim 6 has been amended. New Claims 24-30 have been added. The specification has been amended to address objections raised by the Examiner. A substitute drawing for FIGURE 1 is submitted herewith. No new matter has been introduced. Reconsideration and allowance of Claims 6 and 24-30 is respectfully requested.

The Objections to the Drawings

A replacement FIGURE 1 is provided herewith. The replacement FIGURE 1 is a black and white version of the original color version of FIGURE 1. The original color version of FIGURE 1 is attached hereto as Attachment 1 for reference purposes.

In the replacement FIGURE 1 the original upper blue line is now labelled with reference number (10), the original middle red line is now labelled with reference number (20) and the original lower green line is now labelled with reference number (30). Replacement FIGURE 1 has also been amended to label the x axis with "time (minutes)" and the y axis with "intensity (norm)." No new matter has been added.

The Objections to the Specification

The specification has been amended to address the Examiner's objections to the abbreviations. The references in the specification to FIGURE 1 on page 9 and page 18 have been amended to refer to the replacement FIGURE 1 as described above.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

AMENDMENTS TO THE DRAWINGS

A replacement FIGURE 1 in black and white is provided herewith.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

The Rejections of Claims 1-4 and 6 Under 35 U.S.C. § 112, Second Paragraph

Claims 1-4 and 6 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-4 have been canceled. Claim 6 has been amended to remove the reference to Claim 1. The claim cancellations and amendments render this rejection moot. Removal of this ground of rejection is respectfully requested.

The Rejection of Claims 1-4 and 6 Under 35 U.S.C. § 102(b or e) as Being Anticipated by U.S. Patent Publication No. 2004/0014682 (Ravagan et al.), WO 01/91763 (Ravagan et al.) or WO 01/91764 (Ravagan et al.)

Claims 1-4 have been canceled. Claim 6 has been amended and now recites:

6. (Currently amended) A method for treating a subject afflicted with a liver disease selected from the group consisting of liver dysfunction, liver fibrosis and liver cirrhosis, comprising administering to the subject a therapeutically effective amount of an extract product from the root of *Polygonum multiflorum* Thunb.

Support for this amendment is found in the specification as filed, for example at page 15, lines 24-26; page 20, Example 2, line 15; page 25, line 12; page 26, Example 3, line 1, to page 27, line 25; and FIGURES 2-4.

As acknowledged by the Examiner, the cited references U.S. Patent Publication No. 2004/0014682 (Ravagan et al.), WO 01/91763 (Ravagan et al.) or WO 01/91764 (Ravagan et al.) do not teach or suggest that an extract product from the root of *Polygonum multiflorum* Thunb. is useful for treating a subject afflicted with liver disease, such as liver cirrhosis. See pages 6-7 of non-final Office Action mailed April 17, 2007. Therefore, removal of this ground of rejection is respectfully requested.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

The Rejection of Claims 1-4 and 6 Under 35 U.S.C. § 103(a) as Being Unpatentable Over U.S. Patent Publication No. 2004/0014682 (Ravagan et al.), WO 01/91763 (Ravagan et al.) or WO 01/91764 (Ravagan et al.) in View of Kimura Y. et al. *Planta Medica* 49(1): 51-4 (1983)

Claims 1-4 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0014682 (Ravagan et al.), WO 01/91763 (Ravagan et al.) or WO 01/91764 (Ravagan et al.) in View of Kimura, Y., et al., *Planta Medica* 49(1): 51-4 (1983). Claims 1-4 have been canceled. Claim 6 has been amended and now recites:

6. (Currently amended) A method for treating a subject afflicted with a liver disease selected from the group consisting of liver dysfunction, liver fibrosis and liver cirrhosis, comprising administering to the subject a therapeutically effective amount of an extract product from the root of *Polygonum multiflorum* Thunb.

As mentioned above, the Examiner has acknowledged that U.S. Patent Publication No. 2004/0014682 (Ravagan et al.), WO 01/91763 (Ravagan et al.) or WO 01/91764 (Ravagan et al.) do not teach that an extract product from the root of *Polygonum multiflorum* Thunb. is useful for treating a subject afflicted with liver disease, such as liver cirrhosis.

The teachings of Kimura et al. fail to cure the deficiencies of the Ravagan et al. references in this regard. None of the cited prior art references, either alone or in any combination, disclose the effect of the extract from the root of *Polygonum multiflorum* Thunb. in the treatment of a liver disease selected from liver dysfunction, liver fibrosis and liver cirrhosis.

Kimura et al. discloses that co-administration of extract of *Polygonum* ssp. with peroxidized corn oil had a blood lipid-lowering effect and reduced the elevation of the GOT and GPT levels in the serum of the peroxidized oil-fed rats. See Kimura et al. at page 52. As described in Kimura et al., when co-administered, "[p]iceid and 2,3,5,4'-tetrahydroxy stilbene-2-O-D-glucoside were found to partly inhibit the deposition of lipid peroxides in the liver of those rats." Kimura et al. at page 51 (abstract). Kimura et al. does not provide any suggestion nor

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

motivation on the effect in the treatment of a liver disease such as liver dysfunction, liver fibrosis and liver cirrhosis.

Therefore, no cited reference either alone or in combination discloses the therapeutic efficacy of the extract of *Polygonum* ssp. for treating specific liver diseases as claimed and demonstrated in the instant specification.

As described in the instant specification, the present inventor has demonstrated that a pharmaceutical composition comprising a therapeutically effective amount of an extract product from the root of *Polygonum multiflorum Thunb.* is effective for treating a subject afflicted with a liver disease selected from the group consisting of liver dysfunction, liver fibrosis and liver cirrhosis. Example 2 demonstrates the effect of the extract product from the root of *Polygonum multiflorum Thunb.* on the growth of mouse hepatocytes *in vitro*. Example 3 demonstrates the effect in an animal model of liver cirrhosis (DMN-induced liver cirrhosis in mouse). According to the results shown in Tables 2 and 3 of the specification (pages 24 and 25), different extracts of *Polygonum multiflorum Thunb.* in different concentrations were demonstrated to effectively enhance the proliferation of mouse hepatocytes co-cultured with nonparenchymal cells. Furthermore, the effect on liver regeneration was also confirmed in the mouse liver cirrhosis animal model. See Example 3 (pages 26-27, Figs. 2-4). As described in Example 3:

C3H/HeN mice (7-8 weeks old) were intraperitoneally injected with DMN (dimethylnitrosamine) to induce the production of ascites and the DMN-treated mice were observed to have a progressive increase of ascites around day 12. There mice were then orally administered with 0 mg/kg (●), 100 mg/kg (○), 200 mg/kg (▼) and 40 mg/kg (▽) of PoMyM (n=4 for each group) and survival of mice was monitored daily. The observed results are shown in Figure 2. As can be seen from Figure 2, all of the mice in the control group died around Day 18 to Day 21. In contrast, mice orally administered with either 40mg/kg or 200 mg/kg of PoMuM were still alive after the treatment period of 120 days. Moreover, disappearance of ascites was observed in these mice.

Specification at page 26, line 24, to page 27, line 8.

Therefore, the invention as claimed in currently amended Claim 6 (and Claims 24-30 which depend therefrom) is novel and non-obvious over the cited references. Removal of this ground of rejection is respectfully requested.

New Claims

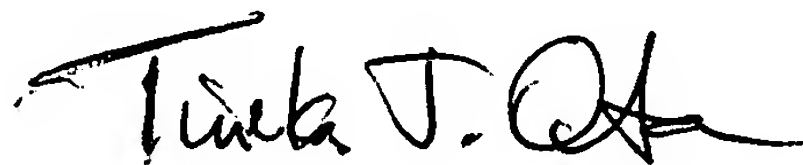
Claims 24-30 have been added. The new claims are supported by the specification as filed. No new matter has been introduced. Support in the specification for Claims 24-26 is found at page 15, lines 24-26; page 20, Example 2; page 25, line 15; page 25, line 12; page 26, Example 3 at line 1, to page 27, line 25; and FIGURES 2-4. Support for new Claims 27 and 28 is found in the specification at page 12, lines 1-19; and at page 13, lines 23-24. Support for new Claim 29 is found in the specification at page 17, lines 22-27. Support for new Claim 30 is found in the specification at page 16, line 10, to page 17, line 21.

CONCLUSION

In view of the foregoing, applicant submits that all of the pending claims are in condition for allowance and notification to this effect is respectfully requested.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}



Tineka J. Quinton
Registration No. 53,496
Direct Dial No. 206.695.1655

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Date: August 14, 2007 Jeffrey Harbert

TJQ:jh

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

Attachment 1

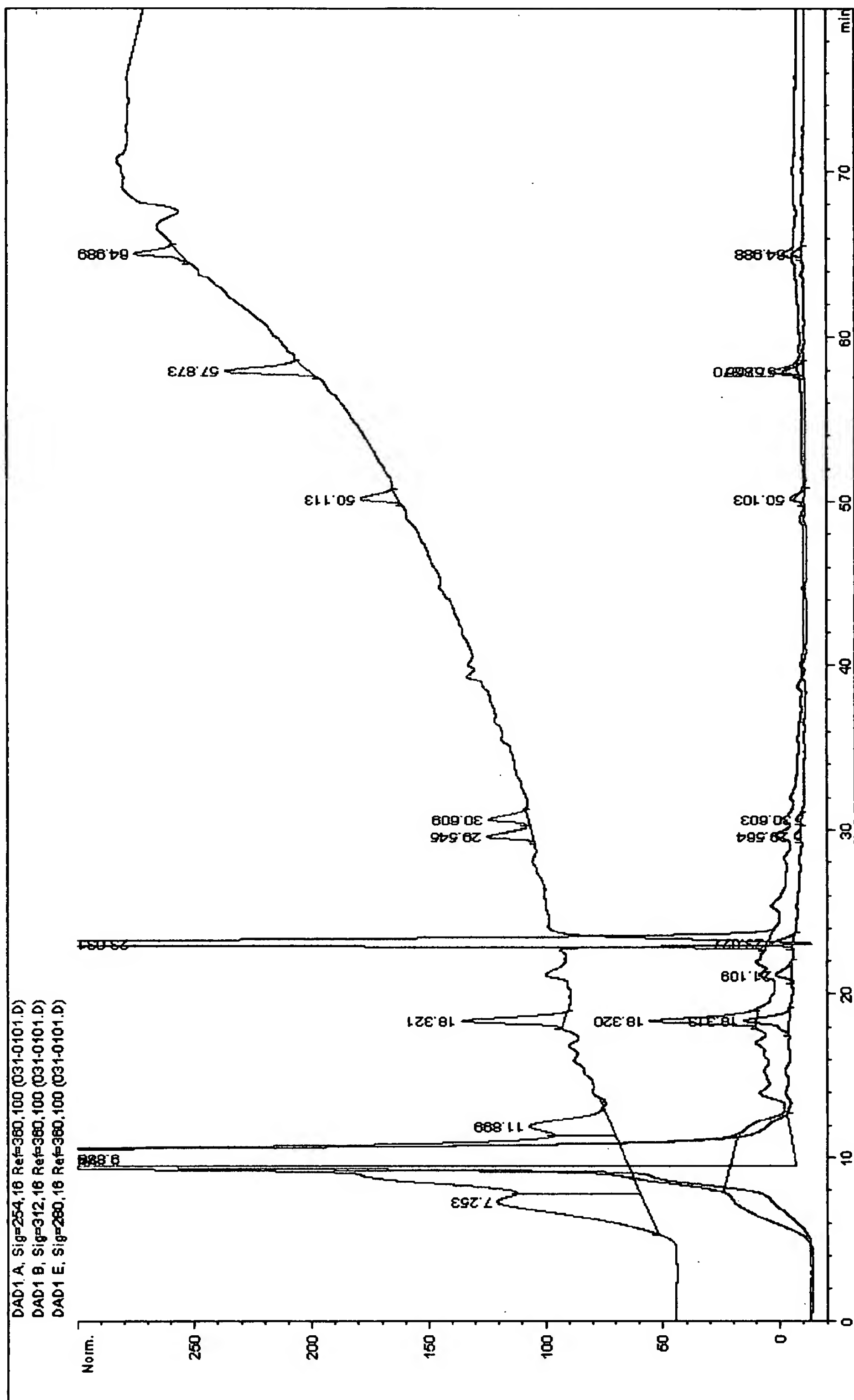


FIG. 1